KNOWLEDGE MANAGEMENT AND THE STRATEGIC LEADER

Mr. Thomas W. Donnelly Jr.
Department of the Army Civilian

Knowledge Management (KM) is a new discipline and a key enabler for strategic leaders to succeed in the information age and the knowledge economy. There are a variety of definitions associated with KM, and from these definitions the strategic leader can assimilate some constants that are worthy of consideration and study. While the study of KM is weighted to the private sector and academia, the application of the field in military organizations is equally important. Successful implementation of Network-Centric Warfare (NCW) as an operational concept will rely heavily on a community of leaders who are trained and educated to apply KM principles and processes within strategic organizations.

Much of the current writing concerning KM and its application in the knowledge economy, involves the term "knowledge leadership." Our society entered into the new age of globalization, and a knowledge economy where the source of power is information. Leading organizations in this age will require strategic leaders or executives who can create a framework within which innovation and ideas can create the leader's vision for the organization. Harnessing the power of information is critical for private, public and government organizations.

This paper will argue that KM is a key process that strategic leaders must understand and implement within their organizations, and that current Army doctrine and training for strategic leaders must change in order to incorporate the new competencies, tasks, and skills required to effectively operate as a knowledge leader in the information and knowledge domain. As the American Productivity and Quality Center (APQC) noted, "We define knowledge as 'information in use.' Knowledge can't exist without information. With good information, people can make better decisions and take intelligent action."[1]

What is Knowledge Management?

Views from Academia

As KM evolves into its own field of study within academic circles, there is a difference of opinion as to just what KM entails. A doctoral dissertation by Dr. Alex Bennet offers a good conceptual view from which to start. "Knowledge management is an embryonic field that gives visibility and focus to an awareness and appreciation of knowledge. Knowledge, the foundational concept, is best understood as the capacity to take effective action."[2] His dissertation later states that KM primarily works with meta-knowledge or knowledge about knowledge, and explains the importance of people, organizations, technology networks, and knowledge about knowledge processes in order to achieve the ultimate goal of enhancing human and organizational performance through the creation, sharing, and application of knowledge.[3] Interestingly enough, the attributes cited above are nearly identical to the components of NCW as described by the Office of Force Transformation.

Another view from the Knowledge Management Center International (KMCI) treats KM more formally as a branch of management and a social science, which seeks to improve business performance by enhancing that organization's capacity to solve problems. KMCI defines KM as an inter-related set of activities whose purpose is to enhance knowledge processing.[4] A popular benchmark publication echoes this theme with the definition; "Knowledge management (KM), which is the systematic processes by which knowledge needed for an organization to succeed is created, captured, shared, and leveraged."[5] The APQC also defines KM as a systemic process, but states that the goal of a KM initiative "…..is to enhance the performance of the organization and the people in it through the identification, capture, validation, and transfer of knowledge."[6] While there are differing views about how KM moves from theory to reality, three common points emerge. KM focuses on the study of knowledge, the processes surrounding knowledge, and improvement of organizational performance.

A View from the Business World

As KM moves from academia to the business world, more concrete definitions emerge, and a greater emphasis is placed on the notion of creating value for the company, as opposed to the notion of merely "improving performance." In fact, distinctions are made between the early theories and of KM, and the current practitioners in the marketplace. "First-generation KM seeks only to enhance the integration of existing organizational knowledge through strategies such as knowledge capture and sharing. Second-generation KM strives to improve knowledge integration, too, but it also seeks to improve knowledge production."[7]

Second-generation KM clearly distinguishes itself from its earlier theory, by stating that sharing and disseminating knowledge is not good enough. There must be a value created by doing something with knowledge that contributes to organizational success. The APQC makes this point quite clearly as it now defines KM as an emerging set of strategies and approaches that allows knowledge to flow to the right people at the right time in order to use the knowledge to create more value for the enterprise.[8]

The implementation of KM in the business world also institutionalized the term "communities of practice" (COPs). Again, a wide variety of definitions surround the term, but the consensus of opinion is that the COPs consist of networked groups of people who share common objectives, and who mutually benefit from sharing information, practices, and ideas (knowledge). The COPs become virtual repositories of knowledge and enhance value for an organization by retaining that knowledge, and by developing innovative solutions to problems.

Views from the Department of Defense (DoD)

Current DoD literature offers little in the way of defining or operationalizing the discipline of KM in a strategic organization. In fact, what is more noticeable is the dearth of KM guidance or procedure available to any level of headquarters, in spite of the creation of Command Knowledge Officers in virtually every Combatant Command and Sub-Unified or Component Command.

As Joint Publication (JP) 6-0 (Doctrine for Command, Control, Communications and Computer (C4) Systems Support to Joint Operations) underwent staffing and rewrite, references to KM actually fell out of the final version. The May 9, 2003 2nd draft contained at least a definition of KM, but the final version dated March 20, 2006 does not contain any mention of KM.

The Joint Forces Command (JFCOM) Pamphlet 5 cites the draft JP 6-0, and establishes an unofficial DoD definition as "Knowledge management is the handling, directing, governing, or controlling of natural knowledge processes (acquire/validate, produce, transfer/ integrate knowledge) within an organization in order to achieve the goals and objectives of the organization."[9] The pamphlet then explains that KM will later focus on the processes and procedures to support a collaborative environment, but offers nothing else in the way of a conceptual or operational framework.

U.S. Army doctrine focuses primarily on the Information Technology realm, with Army Regulation (AR) 25-1 describing Army Knowledge Management as "...the Army's strategy to transform itself into a net-centric, knowledge-based force and an integral part of the Army's transformation to achieve the Future Force."[10] The description in AR 25-1 is clearly a first-generation view of KM as it focuses on information sharing and dissemination to improve decision making by linking people, technology, and information, but the AR does not address the primary role of KM in knowledge processes or in creating value for the Army.

Despite the writings and conceptual documents outlining the transformational aspects of NCW, the DoD and the Army are less focused on documenting a doctrinal basis for adaptation and implementation of KM as a supporting discipline. Contemporary writings however, offer an insight into the criticality of KM to both NCW and strategic decision makers operating in the information age or knowledge economy. "Knowledge Management allows a user to take the now—or even the past—and make accurate predictions about what is going to happen in the future....What defines knowledge management is its ability to allow all decision makers to decide on an immediate course of action and to make projections about future events."[11]

The Importance of Knowledge Management to a Strategic Leader

The Strategic Environment

The knowledge economy and the globalization trends create dilemmas for both corporations and military organizations. Information overload combined with increasing numbers of regulatory guidelines complicate decision making systems. Predicting future trends and charting strategy for an organization become complex tasks with enormous second and third order effects. Strategic leaders routinely rely on reports, feedback, and industry information sources to make key decisions. However, a recent International Data Corporation (IDC) study states that fewer than 14 per cent of managers were very confident that the reports developed in their organizations deliver the relevant information to the right people at the right time. The study concluded that the system shortfalls are due to the lack of investment in the right analytical tools and a disconnect between how information is delivered and the decision support function of that information.[12]

Similar challenges and environments face military strategic leaders. The JFCOM Joint Operational Environment Living Draft describes the strategic environment as one in which information is the ally of someone with the capability and intent to exploit it, and the means of exploitation will center on layered networks that enable NCW. A key element of success in this environment will be leaders who are savvy enough to build the KM processes that connect the people to the right information. "Knowledge is critical for making decisions faster and better than the adversary and for sustaining the advantage of knowledge and decision dominance."[13]

Despite the dearth of doctrinal guidance on KM, the current Capstone Concept for Joint Operations (CCJO) acknowledges the importance of decision and information dominance, and alludes to the importance of KM in the strategic environment.

> *The better we understand our own forces and capabilities, the adversary and the environment, the better we can employ and integrate joint force actions to create decisive effects. Knowledge must be timely, relevant, and accurate to be of value, and it must be acquired, prioritized, refined, and shared vertically (strategic,*

operational, and tactical) and horizontally (within the joint force and among interagency and multinational partners). All knowledge is built on information from integrated strategic, operational, and tactical sources, both military and civilian. The future joint force must possess the capabilities required to accomplish this integration.[14]

The Joint Operations Concepts (JOPsC) also implies that KM is a key ingredient to the success of NCW in the current strategic environment, as it describes the three domains of conflict – information, cognitive, and social. The social domain is then described by NCW as the domain in which humans interact, form shared awareness, and make collaborative decisions. This process of moving from shared awareness to collaborative decision making is in fact the KM discipline. KM is an essential tool to navigate the volatility, uncertainty, complexity and ambiguity of the strategic environment. It provides the processes by which the strategic leader makes decisions.

KM and Network-Centric Warfare (NCW)

While discussions progress in academia, corporations and government agencies concerning the value of KM in today's knowledge economy, it is clear that the KM discipline must play a prominent role in leading the DoD's development of NCW. Globalization and the strategic environment described in the JOE, combined with the networks of transnational and non-nation state actors present a web of threats that are not easy to quantify or describe. Harnessing information and creating knowledge are key processes to defending our national security. Vice Admiral (retired) Herbert Browne stated in a commentary in Signal Magazine, "An observer need look no further than the controversy over weapons of mass destruction to understand the importance of investing in knowledge management. Unknowns about shape, form, storage, transport are as clear a definition for why knowledge management is required as is any that I know."[15]

To confront this present and future strategic environment, the DoD will rely on the emerging concept of NCW. Four components of NCW are people, technology, processes, and organizations. Technology is an enabler for NCW, and it is an enabler for KM. The remaining three components are clearly all pieces of first and second generation KM.

At its core, effective NCW equates to successful implementation of second generation KM to create the value knowledge and decision superiority, which results in speed of battle command and a more effective and lethal fighting force.

A strategic leader within DoD must understand the concept of NCW, and in order to understand NCW, the leader must understand the fundamentals of KM and its application to an organization. NCW is less about the leader who champions technology, but rather it is more about the leader who can envision the processes that technology can enable, the organizational changes that must occur to enable those processes, and the human behavior that must change to work within the organization.

While NCW aims to create shared battlespace awareness to accelerate the speed of command, the true value created by KM is both the increased speed of decision making, and the quality of the decisions that are made.

> *Empowered by knowledge, derived from a shared awareness of the battlespace and a shared understanding of commanders' intent, our forces will be able to self-synchronize, operate with a small footprint, and be more effective when operating autonomously. A knowledgeable force depends upon a steady diet of timely, accurately information, and the processing power, tools, and expertise necessary to put battlespace information into context and turn it into battlespace knowledge.*[16]

The evolution of NCW is on-going and strategic leaders must understand how to operate in the strategic environment to leverage this new concept. Two recent operations underscore the importance of senior leaders understanding the role of KM in managing the changes in processes and organizations in order to implement NCW. The results of KM processes, collaboration technology, and networked organizations give enormous power to the smallest elements on the edges of organizations, and these elements also become the primary sensors and collectors driving the information flow to the decision makers.

Paul Saffo, Director of the Institute for the Future, cites the power of small Special Forces teams in Afghanistan networked to global

strike air power as a prime example of NCW concepts enabled by collaboration tools and KM processes. The lethality of the tactical team increases exponentially because of the combatant command's ability to synchronize global strike missions with tactical operations. While the actual "call for fire" is a basic task and an interoperability issue solved decades ago, the capacity for rapid planning and de-centralized execution planning on a global scale are enabled by KM processes and systems.

However, Mr. Saffo then cites the failure of strategic leaders to capitalize on the early implementation of these processes.

> *Once military leaders "got used to the new normal," they reverted to traditional military tactics, techniques and procedures. This led to incidents like those that occurred in Tora Bora. This is why Osama bin Laden has not been captured, because U.S. forces went back to traditional warfighting after those first few months in Afghanistan. Because leaders are networked does not mean they are collaborating, which can lead to the creation of large bureaucracies instead of leveraging technology.*[17]

Mr. Saffo also cites the federal response to Hurricane Katrina as another lost opportunity for KM and NCW. While the federal response organizations and processes are still structured for a very hierarchical information flow, there is little emphasis or movement to network the elements on the periphery and feed information across physical and bureaucratic lines to speed decision making and execute operations. Both scenarios clearly show that NCW is evolving and it can be a powerful force to add value and capability to military organizations. However, strategic leaders must understand the importance of KM in developing the processes needed to deal with the information flow, and collaborate across organizational boundaries to achieve decision and information dominance.

The Role of the Strategic Leader in KM

"In every successful large-scale KM initiative we have examined, including those in this study, an important senior champion or group saw the strategic value of knowledge management and endorsed what became a significant investment in it."[18] This study by the APQC is but one of several examples that cite the fact that the only

organizations that successfully implement KM, are those in which the senior leadership is supporting and resourcing the change.

The strategic leader plays a critical role in implementing KM for three reasons:

- First, the strategic leader establishes the vision for the organization, and in many cases that leader may also largely develop a strategic action plan to implement the vision. Instituting KM within an organization requires the strategic leader to focus the areas about which the organization should seek knowledge. These areas are those which directly support the future of the organization and should represent the areas that have high potential for generating knowledge with future strategic value.

- Second, the strategic leader identifies where the opportunities are to collect or generate this knowledge. KM studies of both British Petroleum and the Center for Army Lessons Learned (CALL) cited the strategic leader's vision and identification of opportunities as key elements to the successful implementation of KM practices within these organizations.[19]

- Third, the strategic leader is the primary person to influence cultural and organizational change. As noted in the first section, KM involves changing processes, practices, and most likely organizational structures. "Senior executive support is critical to change behavior and institutionalize new approaches to knowledge management. … Executives often have a vision of how this capability will enhance the future success of the organization to achieve its mission."[20] Without the support and drive from the strategic leader, KM initiatives generally result in nothing more than failed IT experiments.

What Does a Strategic Leader Need to Do with KM?

Strategic Knowledge Leadership

While it is unrealistic to think that every DoD or U.S. Army strategic leader will or should become an expert in KM, it is appropriate and necessary for strategic leaders to focus on KM in their organization. This focus should be intertwined with the leader's vision for the

organization, and it should create value as it drives organizational and process changes. It will be extremely difficult for large organizations to succeed in the knowledge economy or NCW environment without successful KM practices. Leadership is the number one critical factor for successful implementation of KM initiatives, especially because KM is a new discipline. Other factors that follow leadership are Culture, Structure, IT Infrastructure and Measurement.[21] KM initiatives will compete for a strategic leader's time and resources along with hundreds of other priorities. The leader's basic understanding of these success factors, combined with a rudimentary understanding of KM, and his vision for the organization will provide a foundation to implement or improve KM practices.

KM is more than a passing management trend. It is intertwined with the essential system of command and control (C2) for any large organization. KM provides the processes and policy that enable the members of the organization to operate, which in turn creates value as the organization accomplishes its mission. JP 6-0 states, "The first element of C2 system is people—people who acquire information, make decisions, take action, communicate, and collaborate with one another to accomplish a common goal."[22] Leading people and implementing KM practices will give the organization a decisive advantage. Not only will the command and control system improve, but the other battle command or mission essential systems will improve as KM practices bring together people, processes and technology to facilitate the exchange and understanding of relevant information.

Advancing these changes within a strategic organization will take the personal impetus of the senior leader. As noted previously, every "successful KM" organization benefited from senior leadership vision and engagement. Because KM involves changing practices, policy, and often times organizational structure, the senior leader must set the framework for the change. "Senior executive support is critical to change behavior and institutionalize new approaches to knowledge management… Cultivating a knowledge-sharing culture is the result of a successful knowledge management strategy."[23]

A senior leader committed to KM implementation will tie his vision for the organization to his KM strategy. He will articulate the key

processes, missions, or tasks the organization must accomplish in order to succeed, and he will enable the collaboration, information sharing, and knowledge creation necessary to accomplish them. Most importantly, he will establish a culture and climate within the organization that rewards teamwork, openness, innovation and learning in order to make this cultural change.

Implementing a KM Strategy

Implementing a KM strategy involves more than publishing a vision, proclaiming KM policies, and investing in the necessary IT infrastructure. The cultural changes mentioned above will present the greatest challenge to the organization and the senior leader. The leader will rely on inter-personal competencies to change his organization's ability to operate in the strategic environment. Instituting cultural change for the purpose of enabling KM practices will require the strategic organization to look both internally and externally. The senior leader will use his negotiating and communicative skills to precipitate these cultural changes. Fundamental to any KM effort is the paradigm shift from "need-to-know" to "need-to-share."

Convincing both internal members of the organization and external agencies to move to this paradigm is challenging. This complex business of knowledge transfer is termed "strategic transfer," and it involves linking organizational goals, elements of the organization responsible for the goals, key knowledge components, polices required for collaboration or shared awareness, and the technological tools needed to create that knowledge. Linking these pieces establishes a system for knowledge transfer much like the NCW concept of linking sensor, shooter, and decision maker to achieve decision and information dominance.

The strategic leader will need to move within his organization to identify the key information, sources, and processes that must be synchronized in order to accomplish the mission and achieve the vision. The internal KM structure within the organization will grow as the leader develops or empowers subordinates to create the processes, policies, and technology systems that create the shared awareness and new knowledge. As this structure grows, the organization creates knowledge that is shared among individuals

and communities of practice. This synergy then creates value as the organization is better able to make decisions and deal with information requirements within its strategic environment.

Externally, the senior leader will need to look at the primary agencies that provide the information or benefit from the knowledge his organization creates. These agencies and organizations must be motivated to share information, and the leaders must focus on developing the requirements that describe the information flow, processes, roles, responsibilities, and employment concept.[24]

Defining success or describing an end state for a KM strategy is a difficult task at best. It is argued that a true knowledge organization must continually produce knowledge, deal with new information sources, and evolve itself to meet the demands of the strategic environment and knowledge economy. The strategic leader understands that the organization's vision may be an end state never actually realized, but there must be measurements to grade the degree of KM implementation within the organization. Otherwise, KM will become another initiative for the duration of his time, vice a true cultural transition. The APQC offers a simple yet effective list of steps in a roadmap for a senior leader to gauge whether KM is taking hold within his organization.

1. KM is linked directly to the business model.

2. KM initiatives are widely deployed.

3. All managers and employees are trained to use them.

4. Methodically address the KM strategy to identify gaps, and outline methods to close the gaps.

5. Formal support structure and rewards program for KM.

6. Sharing knowledge is the norm in the organization.

An organization that accomplishes all of these steps, however, is still not guaranteed success. The knowledge shared and produced, must result in a value for the organization. Essentially, the exchange of information, the KM processes, and the knowledge created must result in a transaction of sorts that achieves organizational objectives

or mission success. Similarly, Admiral (retired) Arthur K. Cebrowski cited high transaction rates as one of the four metrics of success for war in the information age. He also listed creating and preserving options, developing high learning rates, and achieving overmatching complexity at scale as three additional metrics for success.[26]

For the military strategic leader, the value created by KM is increased combat power for his organization, or for the combat forces in the case of support organizations. The central idea of the Net-Centric Joint Force Concept is that if the Joint Force fully exploits both shared knowledge and technical connectivity, then the resulting capabilities will dramatically increase mission effectiveness. KM and NCW are inextricably linked, and the senior leader must implement a KM strategy in order to achieve the information and decision superiority. The CCJO envisions that "Knowledge allows the joint force to see, understand, and act before an adversary can, or before operational needs go unmet in humanitarian crises. It is essential to the identification, creation, and assessment of effects.[27]

Changes to U.S. Army Strategic Leader Education

KM is an evolving practice or discipline, yet it is mature enough and linked so closely with NCW that it is worthy of additional mention in the doctrine for educating strategic leaders. KM needs to be addressed directly as a strategic leader competency in the U.S. Army War College Strategic Leader Primer. The current publication adequately addresses the responsibility of the strategic leader to master information and influence in order to succeed in the strategic environment characterized by volatility, uncertainty, change, and ambiguity. However, neither the specified competencies, nor the specified tasks that accompany the competencies adequately address the importance or the need for the strategic leader to drive KM strategy within his organization.

The doctrine calls for the leader to manage change, build a learning organization, and leverage technology in doing so. Technical competencies state the importance of systems understanding, recognizing interdependencies and awareness of information-age technology. While all of these tasks and competencies are accurate, they do not convey the concept, practice, or importance of KM as

a critical enabler for the strategic leader. The Army Policy in AR 25-1 places the CIO/G6 as the proponent for Army KM policy and guidance. The text of AR 25-1 primarily addresses business practices and IT aspects of KM, but it does little to address the "ends" or "ways" of the Army strategy for the use of KM by strategic leaders to develop NCW capabilities, and add value to the Army by increased capabilities in battle command and lethality.

Specifically, the Strategic Leader Primer should address KM as a separate conceptual or technical competency. KM as a discipline involves people, organizations, technology, and processes. The ability of a strategic leader to implement a vision in the strategic environment of the knowledge economy and the information age is directly proportional to an organization's understanding and implementation of KM. The ability of the strategic leader to influence organizational culture is also directly proportional to understanding the effect of KM in creating value from the organization. KM is a critical enabler to achieving the leader's vision and tasks. Similar to organizational culture change, implementing a KM culture is a five to ten year process that outlasts the tenures of multiple leaders. A strategic leader must be exposed to case studies and practices that demonstrate the factors that create the conditions for an organization to transition to a knowledge sharing culture.

Ultimately, the strategic leaders of today and tomorrow will operate in a NCW environment. Debates will continue on how far or how fast the DoD is evolving in NCW, but ultimately large organizations are operating and will continue to operate in a networked environment. Both first generation KM (knowledge sharing and dissemination), and second generation KM (knowledge integration and knowledge production), are key components to successful implementation of NCW. Today's strategic leader must have a basic level of competency with KM in order to link vision, organizational objectives, information sources, knowledge requirements, policies, processes, and technology. Without this basic competency, KM will remain an ill-defined discipline focused on IT solutions. Two successful KM corporations, Hewlett Packard and British Petroleum, both had CEOs firmly committed to KM. "The American Productivity and Quality Center notes that the best practice organizations come to rely on the

CEO having a personal belief in the efforts and including effective knowledge management as part of the organization's vision."[28]

The framework for the strategic leader competencies should also include an explanation of the benefits and uses of COPs within strategic organizations. The Center for Creative Leadership asserts that as the strategic environment of the knowledge economy and the information age continue to become increasingly complex, the associated challenges become more difficult to solve. The Strategic Leadership Primer makes an important distinction between problem management and decision making. Communities of Practice are critical KM processes and organizations that allow individuals to create knowledge and develop solution sets through cross-functional and external coordination and collaboration. As noted by the Center for Creative Leadership, senior leaders must develop this new skill of creating an environment where others can help them succeed through a process of collective and interdependent decision making across boundaries and functions.[29]

At the more basic level, it is critical that strategic leaders become exposed to the emerging concept of the Chief Knowledge Officer (CKO) and study examples of how various organizations have succeeded and failed to use this resource. The corporate world continues to struggle with how to place the CKO in the organizational structure and how to define its roles and responsibilities. There is even less documentation of examples within the DoD, but all levels of organizations are beginning to create these positions. The potential exists for this resource to either enable NCW to develop, or to hinder the advancements in NCW. The end result will depend on senior leadership.

Much of the DoD and the U.S. Army divested themselves of the Total Quality Management (TQM) phenomenon before the concept of Net-Centric Warfare became a common term. Unfortunately, ill perceptions about "another management craze" may still linger, and perceptions of KM and its utility for military organizations will continue to fluctuate. However, what separates the two is the fact that KM is inextricably linked to NCW concepts and tenets. NCW is a reality, and strategic leaders are now practitioners of a new form of warfare.

It is imperative that these leaders become conversant and familiar with the discipline of KM, in order to balance the people, processes, technology and organization to create the value of increased combat power. As Admiral Cebrowski poignantly stated, "The predominant pattern of human behavior in the information age is network behavior. Network-centric warfare is about human behavior in a networked environment, and in warfare, human behavior ultimately determines outcome."[30]